

# A tone split in Taoping Qiang

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## Abstract

Evans (2001a, 2001b) argues that modern Southern Qiang (SQ) developed tones through a somewhat typologically unusual pathway: after developing pitch accent from earlier lexical stress, the languages became increasingly ‘tone-prone’ following phonological reduction of syllables and the segmental inventory (Matisoff, 1998), developing tonal systems after heavy borrowing from Mandarin. Here, I suggest that otherwise phonologically conservative Taoping Qiang also shows evidence of more ‘traditional’ tonogenetic mechanisms, which may have conditioned a tone split from the original \*H reflex.

## 1 Background

- **Qiang** (Tibeto-Burman, Qiangic): spoken by about 150,000 people in Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province, China (LaPolla, 2003); related languages include Pumi, Ersu, and rGyalrong
- Divided into Northern (NQ) and Southern (SQ) dialects based on presence/absence of tone and cognacy rates (Sun Hongkai, 1981, cf. Wen Yu, 1941)
- NQ dialects are stress-prominent, while SQ dialects are tone-prominent (Evans, 2001a, 2001b; LaPolla, 2003)
- SQ dialects include Dajishan, Taoping, Longxi, Mianchi, and Heihu (Sun Hongkai 1981); NQ dialects include Yadu (LaPolla & Huang, 2003) and Mawo (Sun Hongkai 1981).



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## 2 Phonology of Southern Qiang dialects (Evans 2001b)

### Segmental inventory

	Labial	Dental	Retroflex <sup>1</sup>	Palatal	Velar	Uvular	Glottal
Plosive	p p <sup>h</sup> b	t t <sup>h</sup> d			k k <sup>h</sup> g	q q <sup>h</sup>	
Affricate		ts ts <sup>h</sup> dz	tʂ tʂ <sup>h</sup> dʒ	tɕ tɕ <sup>h</sup> dʒ			
Fricative	(f)	s z	ʂ ʐ	ɕ ʑ		χ ʁ	h <sup>2</sup> f <sup>3</sup>
Nasal	m	n		ɲ	ŋ		
Lateral		l					
Approximant <sup>2</sup>	w		ɹ	j			

<sup>1</sup>Mianchi and Taoping only. <sup>2</sup>Longxi only. <sup>3</sup>Mianchi and Longxi only.

- Syllable structure is (C) (R) (V<sub>i</sub>) V (V<sub>f</sub> / N), where R is either /ɹ/ (Longxi) or a retroflex fricative (Mianchi, Taoping), and V<sub>i</sub> is a high vowel
- Only Longxi retains approximants, but also merges dental and retroflex affricates and fricatives to dentals (possibly under influence from Mandarin: Evans 2001a:62)
- Longxi and Mianchi allow very limited number of initial clusters; Taoping allows a wide variety (24, most beginning with χ < PTB \*s- prefix); NQ dialects have many more (71 in Mawo, 50 in Yadu)

### Tonal systems (all data from Evans 2001b)

**Longxi.** LQ has two major (L, H) and three minor (R, M, F) tones.

<i>tone</i>	<i>type</i>	<i>freq</i>	<i>%</i>	<i>restrictions</i>	<i>example</i>
L (33 ~ 31)		3912	63.61%	all initials	pù ‘pus’, bù ‘pile up’
H (55)		2173	35.33%	all initials	pú ‘buy’, bú ‘board, plank’
R (13 ~ 213)		43	0.7%	voiced initials only	mǒ ‘without’
M (35)		19	0.31%	borrowings, coal. σ	mo <sup>35</sup> ‘disappear’ < mò 没
F (51)		3	0.05%	borrowings, coal. σ	vò lû ‘stone’

**Mianchi.** MQ is basically a pitch-accent system of high and low (-falling) pitch, with contour tones in a small percentage of the lexicon.

<i>tone</i>	<i>type</i>	<i>freq</i>	<i>%</i>	<i>restrictions</i>	<i>example</i>
L (31)		4288	67.3%	all initials	pù ‘do’, bù ‘deaf’
H (55)		1775	27.9%	all initials	pú ‘dry measure’, bú ‘shape’
R (13 ~ 213)		226	3.5%	all initials	tshǔ ‘vinegar’ < cù 醋, dè mǒ ‘earthquake’
F (51)		76	1.2%	all initials	(mɛ) ʁwâ ‘call (person)’, tàè qà pǔ ‘reap’
M (35)		4	0.01%	borrowings	pæŋ <sup>35</sup> -khə ‘freshwater clam’ < bàng 蚌

Mianchi allows only one accented syllable per word; F and R tones do not co-occur with H. Accent sandhi is unpredictable (Evans 2001a, cf. Matisoff 1997)

**Taoping.** TQ has six tones: (33, 55, 31, 241, 13, 51), of which 13 and 51 occur only in Mandarin borrowings.

<i>tone</i>	<i>type freq</i>	<i>%</i>	<i>restrictions</i>	<i>example</i>
33	764	43.6%	all initials	$pə^{33}$ ‘old’ (people), $ba^{33}$ ‘old’ (things)
55	495	28.2%	all initials	$sɿ^{55}$ ‘leopard’, $zɿ^{55}$ ‘rich’
31	337	19.2%	all initials	$ɸua^{31}$ ‘help’, $q^ha^{31}$ $q^ha^{31}$ ‘face’
241	94	5.4%	voiced native initials	$zi^{241}$ ‘fathom, arm spread’
13	43	2.5%	4th tone (25) borrowings	$tʂɿ^{13}$ ‘mole’ < $zhì$ 痣
51	21	1.2%	3rd tone (53) borrowings	$mu^{51}$ ‘acre’ < $mǔ$ 亩

### 3 Contact-induced tonogenesis in SQ

“...the first documented case of which I am aware in which tonogenesis has occurred without any concomitant loss of segmental information.” (Evans 2001b:216)

#### 4 arguments for a toneless PSQ (Evans 2001a, 2001b):

- *Lack of inherited tone in SQ.* Neither phonologically conservative languages which preserve PTB initials and codas (e.g. rGyalrong) nor segmentally complex NQ dialects have phonemic tone (even in borrowings, e.g. Yadu  $jaŋ sə$  < 颜色  $yán sè$  ‘color’)
- *Weak role of tone in SQ dialects.* Tones have minimal functionality, variable realization, and divergent frequency of occurrence; tone assignment on borrowings is often seemingly arbitrary (compare Longxi  $tʂa^{35} dà$  <  $zhá$  炸 ‘deep fry’,  $kuai^{35} dà$  <  $guài$  怪 ‘blame’,  $kao^{35} dà$  <  $kǎo$  考 ‘try, test’)
- *Inverse relationship between tone and phonological simplicity.* Role of tone inversely proportional to the segmental complexity (Liu Guangkun, 1998) (though this does not seem to hold true for Taoping)
- *Correlation of tonality and borrowing.* The more Mandarin borrowings in a dialect, the greater the role of tone in that dialect.

#### 4 stages of tonogenesis in SQ (Evans 2001ab)

1. Lexical stress (shared by modern NQ dialects)
2. Development of pitch accent (no HH in Mianchi, rare in Longxi)
3. Phonological reduction of syllables & segments (onsets and codas) (Benedict, 1982)
4. Increased borrowing and native extension of Chinese tone

**Question:** why does Taoping have the most complex tone system of any SQ dialect?

**Proposal:** Taoping tones have subsequently **split** due to segmental influences.

## 4 Evidence for a tone split in Taoping Qiang disyllables

### 1. Reflex of \*H from \*LH (as 33 or 55) is largely predictable from the onset.

ID	gloss	Mianchi	Longxi	Taoping	Notes
33	‘ash’	zà zí	dzɿ dzí	dzɑ <sup>31</sup> dzɿ <sup>33</sup>	LH
128	‘buckwheat’	zuà ɓá	dzuà ɓá	dzua <sup>31</sup> ɓɑ <sup>33</sup>	LH
141	‘buttocks’	–	thà bá	thɑ <sup>31</sup> ɓɑ <sup>33</sup>	LH (Longxi ‘vulva’)
159	‘chaff 2’	zuè pú	dzuè pú	pə <sup>31</sup> ɓzɑ <sup>33</sup>	LH
183	‘cloth’	bù miá	bzù miá	bzɿ <sup>31</sup> me <sup>33</sup>	LH
189	‘comb’	qè cý	qè suí	qə <sup>31</sup> suə <sup>33</sup>	LH (exception)
275	‘ear’	ɳì ká	nè ké	ɳi <sup>31</sup> kie <sup>33</sup>	LH (exception)
286	‘eleven’	fià tɛí	fià tí	χɑ <sup>31</sup> tsɿ <sup>33</sup>	LH (exception)
358	‘fist’	qù ɳú	qù ɳá	χkue <sup>31</sup> ɳi <sup>33</sup>	LH
533	‘knife’	tɕà piá	tsè kǐ	tɕɑ <sup>31</sup> dzɔ <sup>33</sup>	LH
969	‘ten’	fià dzó	fià diú	χɑ <sup>31</sup> dy <sup>33</sup>	LH
70	‘bird’	ì tshá	ì tshé	i <sup>31</sup> tshie <sup>55</sup>	LH
163	‘cheek’	tɕì piá	tɕí pià	tɕi <sup>31</sup> pa <sup>55</sup>	LH
386	‘frog’	zò piá	dzò piá	dzua <sup>31</sup> pu <sup>55</sup>	LH
500	‘ice’	tsù pá	tsuè pá	tsuə <sup>31</sup> pe <sup>55</sup>	LH
548	‘language’	zè mú	zuè mé	tsuə <sup>31</sup> pe <sup>55</sup>	LH
806	‘rooster’	ỳ qú	ì qouí	yi <sup>31</sup> qu <sup>55</sup>	LH
879	‘smoke’	mù khí	mù qhué	mə <sup>31</sup> khuə <sup>55</sup>	LH
1018	‘tongue’	zèqè	zà qé	zɿ <sup>31</sup> qə <sup>55</sup>	LH

189 ‘comb’ may be a borrowing from Mandarin *shū* 梳.

286 ‘eleven’: cf. Taoping a<sup>31</sup> ‘one’, χɑ<sup>31</sup> dy<sup>33</sup> ‘ten’

### 2. Taoping 33-55 patterns (already fairly rare) are almost all clearly \*LH.

ID	gloss	Mianchi	Longxi	Taoping	*accent	notes
200	‘crow’ (n.)	–	nə-ɳá	nə <sup>33</sup> ɳɑ <sup>55</sup>	LH	
243	‘divide’	ɓò ɓó	zɿ zouí	zɿ <sup>33</sup> zɿ <sup>55</sup>	LH	
486	‘horn’	ɿə ká	zɿ ké	zɑ <sup>33</sup> qə <sup>55</sup>	LH	
499	‘how many’	nà ó	ɳà qó	na <sup>33</sup> tɕi <sup>55</sup>	LH	
596	‘man’	bià phà	bè liú	ba <sup>33</sup> phe <sup>55</sup>	L?	
806	‘saw’	–	kè zǐ	kie <sup>33</sup> zɿ <sup>55</sup>	LH	
916	‘star’	zà bà	dzɿ	χdzɿ <sup>33</sup> pe <sup>55</sup>	L?	cf. PTB *gra:y
947	‘sun’	mù cí	mè sí	ma <sup>33</sup> si <sup>55</sup>	LH	
1091	‘wild pig’	pià xó	pià xá	pa <sup>33</sup> χɑ <sup>55</sup>	LH	

Voiced \*H>55  $\sigma_2$  are either sonorants (which often have high-toned or otherwise different reflexes than do voiced obstruents: Maddieson, 1984; Thurgood, 1997) or retroflex (for which VC > CV transitions: Steriade, 1997).

### 3. Historical \*LL almost always surface as 31-33 in Taoping, not 31-55.

ID	gloss	Mianchi	Longxi	Taoping	*accent	notes
106	‘brain’	qè nà	qè nà	qə <sup>31</sup> χna <sup>33</sup>	LL	voicing assim.
278	‘earring’	ɲì mà	nè mà	nə <sup>31</sup> ma <sup>33</sup>	LL	
279	‘earth’	zù	zuè (pè)	zuə <sup>31</sup> pə <sup>33</sup>	LL	
366	‘flour’	bà lò	lè-bè-liù	ba <sup>31</sup> ly <sup>33</sup>	LL	
387	‘frost’	pià thò	peì thòu	χpa <sup>31</sup> thu <sup>33</sup>	LL	
470	‘hit target’	dà uà	dè uě	da <sup>31</sup> ye <sup>33</sup>	LL	
614	‘mistaken’	dà tsà	kè tshù	tə <sup>31</sup> tshie <sup>33</sup>	LL	
632	‘mush deer’	tshì lè	sè lè	tchi <sup>31</sup> lə <sup>33</sup>	LL	
765	‘relatives’	qà zè	kè dzè	kie <sup>31</sup> dzi <sup>33</sup>	LL	
982	‘thing’	pà nà	pà nà	pa <sup>31</sup> ne <sup>33</sup>	LL	
1034	‘under’	qà tò	qà tà	qha <sup>31</sup> lə <sup>33</sup>	LL	
151	‘cat’	mà ɲù	mè ɲòu	ma <sup>31</sup> ɲy <sup>55</sup>	LL	Lahu <i>mé-ni</i>
263	‘drunk’	(ɕì) tə χèi	ʂè χè	sɿ <sup>31</sup> χe <sup>55</sup>	LL	see below
1093	‘win’	tə qò	qà	tə <sup>31</sup> qa <sup>55</sup>	LL	also <i>da<sup>31</sup> qe<sup>33</sup></i>

263: This form seems to diverge from well-attested PTB \*yit, cf. (Qiangic) Queyu **zi**<sup>35</sup> **si**<sup>53</sup>, Ersu **the**<sup>33</sup> **zɿ**<sup>31</sup>. ‘Alternatively these Qiangic forms might come from a well-attested open-syllable variant, reflected by WT **bzi-ba** ‘drunk’ and PLB \***m-dzəy** ‘liquor’ (> Lahu **jì** [dzì], Akha **dží**, Lisu **dʒɿ**<sup>33</sup>.’ (Matisoff, 2003: 350)

## 5 Segmental influence on tone in Taoping disyllables

- The distribution of tones in the second syllable of disyllables is considerably restricted:  $\sigma_2$  is usually 33 or 55. 31 also quite rare as tone of monosyllable in Taoping
- The reflex of  $\sigma_2$  \*accent is largely predictable: 33 when LL, 55 LH and voiceless onset, 33 when LH and voiced onset, suggesting **primary split** of  $\sigma_2$  55
- Can anything be said about  $\sigma_1$  variation of \*L?

**One idea** \*L<sub>1</sub> > 31, \*L<sub>2</sub> > 33

- Since 55 tend to occur w/voiceless onsets generally, 31-55 > 33-55 (already rare) may be an assimilation effect where the onset of the 55 syllables was voiceless
- Involves positing two reflexes for \*L based on position

**Another idea** \*L<sub>1</sub> > 33 and then later > 31 due to lowering effect of  $\sigma_2$  voiced onset.

- Supported by the rarity of 33-55 patterns in the data, and rarity of monosyl. 31 forms
- Involves explaining away 31-33 forms where the 2nd syllable has a voiceless onset (279 ‘earth’, 387 ‘frost’, 614 ‘mistaken’) & prevalence of 31 in Mianchi/Longxi

## 6 Conclusions

- While catalysed by other means, the subsequent evolution of tone in Taoping Qiang may be (in part) segmentally driven (a strong phonetic universal)
- Why haven't similar splits taken place in Mianchi or Longxi?
  - Conditioning environment may have been lost before catalyst was present
  - May be obscured due to sporadic tone sandhi as in e.g. Pumi (Matisoff, 1997) or accent sandhi in Mianchi (Evans, 2001b:57 ff.)
- Other cases of contact-induced tonogenesis?

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